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STUDIES ON SOME BORMANS'S MATERIALS
OF DERMAPTERA (INSECTA)

INTRODUCTION

Present study is based on 38 specimens determined by Bormans and preserved in the Museo Civico di Storia Naturale «Giacomo Doria», Genova, Italy. It includes 'Types' of seven species viz., *Psalidophora angusticollis*; *Platylabia fallax*, a synonym of *Chaetospania nigriceps* (Kirby); *Lobophora doriae* Bormans, a synonym of *Chelisocheilla superba* (Dohrn); *Chelisocheilla elegans*; *Chelisocheilla variopictus*; *Opisthocosmia beccarii* and *Opisthocosmia lugens*.

Altogether 18 species, excluding 1 sp. determined up to generic level, since represented by a ♀, are recognised. Of these two species, namely *Chaetospania modiglianii* and *Chaetospania beccarii* are described as new. Besides it is proposed to synonymize *Psalis lefroyi* Burr under *Nannopygia dohrni* Kirby and *Opisthocosmia aesculapius* Burr under *Opisthocosmia lugens* Bormans and place *Chelisocheilla elegans* Bormans under the genus *Adiathetus* Burr. Lectotype and paralectotypes are designated for *O. lugens*, recording intraspecific variations.

It is observed that Types 1 ♂, 1 ♀ of *Lobophora doriae* Bormans, a synonym of *Chelisocheilla superba* (Dohrn) do not possess carina along the costal margin. In the light of above some changes in taxonomic placement of this species would be desirable which require further investigation.

Following list will provide the details, at a glance, of determinations made as a result of present investigation, as well as by Bormans.

Present identifications Det. by BORMANS

Family: CARCINOPHORIDAE

Subfamily: CARCINOPHORINAE

| | | |
|--|---|---|
| <i>Paralabis dohrni</i> (Kirby) | = | <i>Labidura femoralis</i> Dohrn - 2 ex. |
| (= <i>Psalis lefroyi</i> Burr Syn. n.) | | |
| <i>Epilandex burri</i> Borelli | = | <i>Labidura femoralis</i> Dohrn - 1 ex. |

Family: LABIIDAE

Subfamily: NESOGASTRINAE

Nesogaster amoenus (Stål) = *Labia amoena* (Stål) - 1 ex.

Subfamily: SPARATTINAE

Auchenomus angusticollis (Dubrony) = *Psilidophora angusticollis* Dubrony
Type ♀ (nec ♂)

Subfamily: LABIINAE

Chaetospania nigriceps (Kirby) = *Platylabia fallax* Bormans
Types 1 ♂, 1 ♀

Chaetospania modiglianii sp. n., 1 ♂ = *Platylabia fallax* Bormans - 1 ♂

Chaetospania thoracica (Dohrn) = *Platylabia fallax* Bormans - 1 ♂;
Platylabia dimidata Dohrn - 1 ♀

Chaetospania beccarii sp. n., 1 ♂ = *Platylabia thoracica* Dohrn - 1 ♀

Chaetospania sp. - 1 ♀ = *Platylabia thoracica* Dohrn - 1 ♂,
Isole Aru

Labia curvicauda (Motschulsky) = *Platylabia dimidiata* Dohrn - 1 ♂

Subfamily: IRDEXINAE

Irdex nitidipennis (Bormans) = *Sphingolabis arachidis* Yersin
(= *wallacei* Dohrn) - 1 ♀

Subfamily: SPONGIPHORINAE

Marava arachidis (Yersin) = *Sphingolabis arachidis* Yersin
(= *wallacei* Dohrn) - 1 ♂

Family: CHELISOCHIDAE

Subfamily: CHELISOHELLINAE

Chelisochea superba (Dohrn) = *Lobophora doriae* Bormans
Types 1 ♂, 1 ♀

Subfamily: CHELISOCHINAE

Adiathetus elegans (Bormans) comb. n. = *Chelisoches elegans* Bormans sp. nova
Type ♂

Chelisoches morio (F) = *Lobophora morio* (F) - 13 exs.

Chelisoches brevipennis (Borelli) = *Lobophora morio* (F) - 1 ex.

Proreus variopictus (Bormans) = *Chelisoches variopictus* Bormans sp. nova
Type ♂

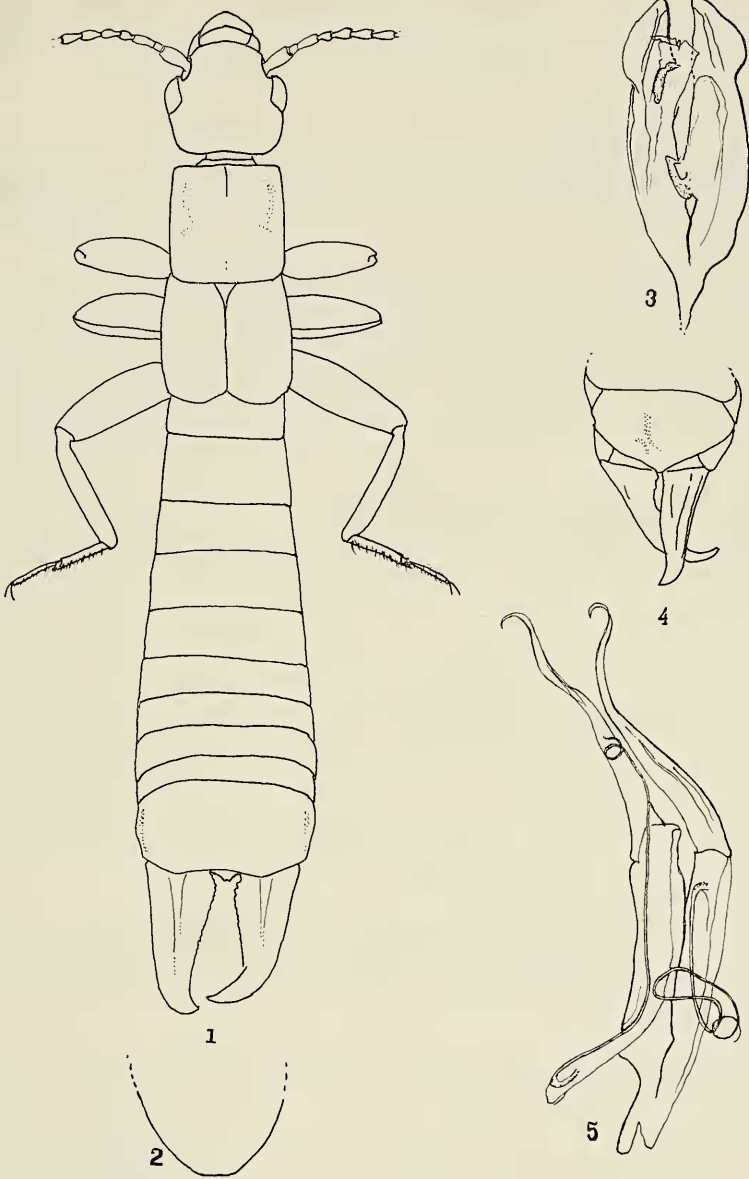
Family: FORFICULIDAE

Subfamily: OPISTHOCOSMIINAE

Narberia beccarii (Bormans) = *Opisthocosmia beccarii* Bormans sp. nova
Type ♂

Timomenus lugens (Bormans) = *Opisthocosmia lugens* Bormans sp. nova
(= *Opisthocosmia aesculapius* Burr
- Syn. n.)
Types 2 ♂♂, 1 ♀ and 1 ♂

Lectotype ♂, Paralectotypes 1 ♂, 1 ♀.



Figs. 1-5. *Paralabis dohrni* (Kirby), ♂, 1: dorsal view; 2: posterior margin of penultimate sternite; 3: genitalia. *Epilandex burri* (Borelli), ♂, 4: penultimate sternite and forceps; 5: genitalia.

Family CARCINOPHORIDAE

Subfamily CARCINOPHORINAE

Paralabis dohrni (Kirby) (Figs. 1-3)

- Namopygia dohrni* Kirby, 1891, *J. Linn. Soc. (zool.)*, 23: 508 (♀; Ceylon - Type in British Museum (Natural History, London); Bormans, 1900, *Das Tierreich*, 11:11.
- Labidura femoralis*, Dubrony (néc Dohrn), 1879, *Annali Mus. civ. St. nat. Genova*, 14: 353.
- Carcinophora caeruleipennis* Bormans, 1900, *Das Tierreich*, 11: 40.
- Carcinophora dohrni*; Burr, 1901, *J. Bombay nat. Hist. Soc.*, 14: 328, pl. B, Fig. 20 (♂, ♀, Description); Brindle, 1971, *Ent. Scand. Suppl.*, 1: 219.
- Psalis dohrni* Burr, 1910, *Fauna Brit. India, Dermaptera*: 76, pl. 3, fig. 19; Burr, 1911, *Genera Insect.*, 122: 74; Burr, 1912, *Annl. naturh. Mus. Wien*, 26: 74; Burr, 1913, *Rec. Indian Mus.*, 8 (2): 138; Burr, 1914, *Rec. Indian Mus.*, 10: 287.
- Anisolabis brunneri* ? Burr (néc Dohrn), 1906, *J. Asiat. Soc. Beng. (N.S.)*, 2 (4): 389 (♀ nec ♂, Purneah, Dist. N. Bengal (now in Bihar)).
- Psalis lefroyi* Burr, 1910, *Fauna Brit. India, Dermaptera*: 77, pl. 3, fig. 20, ♀ (not ♂), Bombay, Mahim «feeding on plaintain roots» Pusa Bengal; type ♀ in British Museum (Natural History, London) - Syn. n.
- Paralabis lefroyi*; Srivastava, 1971, *Entomologist Rec. J. Var.*, 83: 206, figs. A-C (♂ genitalia); Srivastava, 1976, *Rec. zool. Surv. India, Occ. Pap.*, 2: 23.
- Paralabis antennatus* Ramamurthi, 1973, *Zool. Anz.*, 5/6: 441, figs. 11-13 (1 ♂, 3 ♀♀, 1 nymph, Tamil Nadu, Kaller - types with the author).

Material examined - 1) 1 ♂ labelled as: i) Galle Ceylan, XII.'74, D'Albertis; ii) *Labidura femoralis* (Dohrn) var. sans ailes, *Forcinella*? - a handwritten label by Bormans; iii) *Labidura femoralis* Dohrn teste A. Dubrony (= De Bormans) - partly printed and partly handwritten; iv) Museo Civico di Genova; and v) *Psalis dohrni* Kirby ♂ - handwritten label by Borelli; genitalia mounted between two coverslips and pinned with the specimen.

2) 1 ♂ (hind portion of abdomen missing), bearing same number of labels as above with identical information, except on label iii) mentioned as "*Labidura femoralis* Dohrn var. sans ailes ♂ Dohrn, Ent. Stett. Zeit. 321".

Remarks - The above material undoubtedly belongs to this species.

Paralabis dohrni (Kirby) and *P. lefroyi* (Burr), both were described originally on females and were discriminated from each other by the shape of hind margin of elytra which does not seem to be a valid character. However, Srivastava (in press) tried to separate the two on the shape and texture of sides of abdominal segments. Even this character

does not seem to be constant. For this reason it is proposed to synonymise *P. lefroyi* (Burr) under *P. dohrni* (Kirby).

Epilandex burri (Borelli) (Figs. 4-5)

Landex burri Borelli, 1921, *Bull. Mus. Hist. nat., Paris*, 27: 81 (♂, ♀; Siam: Bangkok).

Epilandex burri; Hebard, 1923, *Mem. Dept. Agric. India, ent. ser.*, 7: 27.

Epilandex undulata Ramamurthi, 1963, *Ann. Mag. nat. Hist.*, (13) 6: 627 (♂, India: Tamil Nadu, Coimbatore).

Material examined - 1 ♂ labelled as: i) Australia, Somerset, I.75, L.M. D'Albertis; ii) *Labidura femoralis* (Dohrn) ♀ *Forcinella?* - handwritten label by Bormans; iii) *Labidura femoralis* Dohrn-teste A. Dubrony (= De Bormans) - partly handwritten and partly printed; iv) Museo Civico di Genova - printed label; v) *Landex burri* Borelli var. brachyptera - handwritten by Borelli.

Remarks - The above specimens appear to have been correctly determined by Borelli. The sides of abdominal segments from 5th to 9th are acute angled posteriorly but carina is present on segments 6th to 9th only.

DUBRONY (1879) has reported this specimen as male in the text but the ultimate tergite and forceps are figured and labelled as ♀.

The above record of the species from Australia does not appear to have been reported earlier.

Family LABIIDAE

Subfamily NESOGASTRINAE

Nesogaster amoenus (Stål) (Fig. 6)

Forficula amoena Stål, 1855, *Öfvers. Vetensk. Akad. Forh. Stock*, 12: 350 (♀, Java).

Nesogaster amoenus; Burr, *Ann. Mag. nat. Hist.*, (8) 1: 45 & 46.

Material examined - 1 ♂ labelled as: i) Borneo Sarawak, 1865-66, coll. G. Doria - printed label; ii) *Labia amoena* Stål - handwritten, not by Bormans; iii) *Labia amoena* (Stål) teste A. Dubrony (= De Bormans).

Remarks. - The present specimen is winged and the pygidium is slightly longer than broad.

HINCKS (1951) has described in detail the variations occurring in this species.

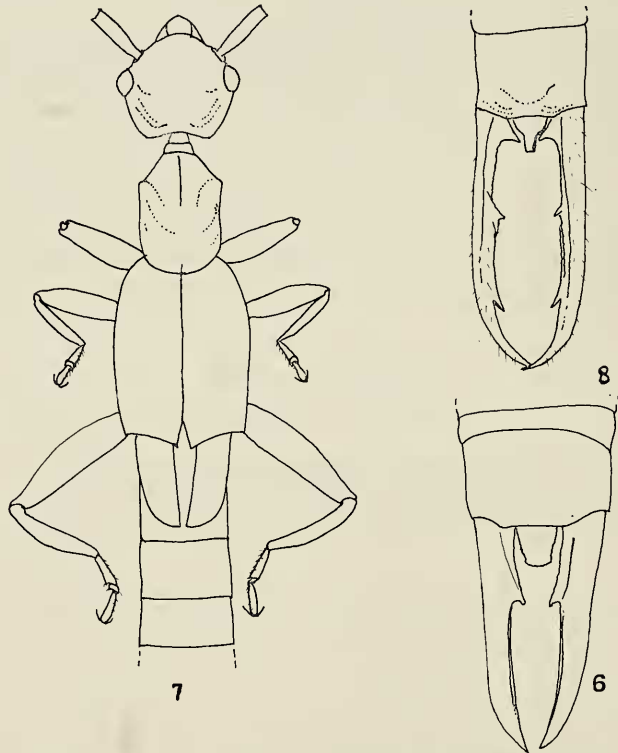
Subfamily SPARATTINAE

***Auchenomus angusticollis* (Dubrony) (Figs. 7-8)**

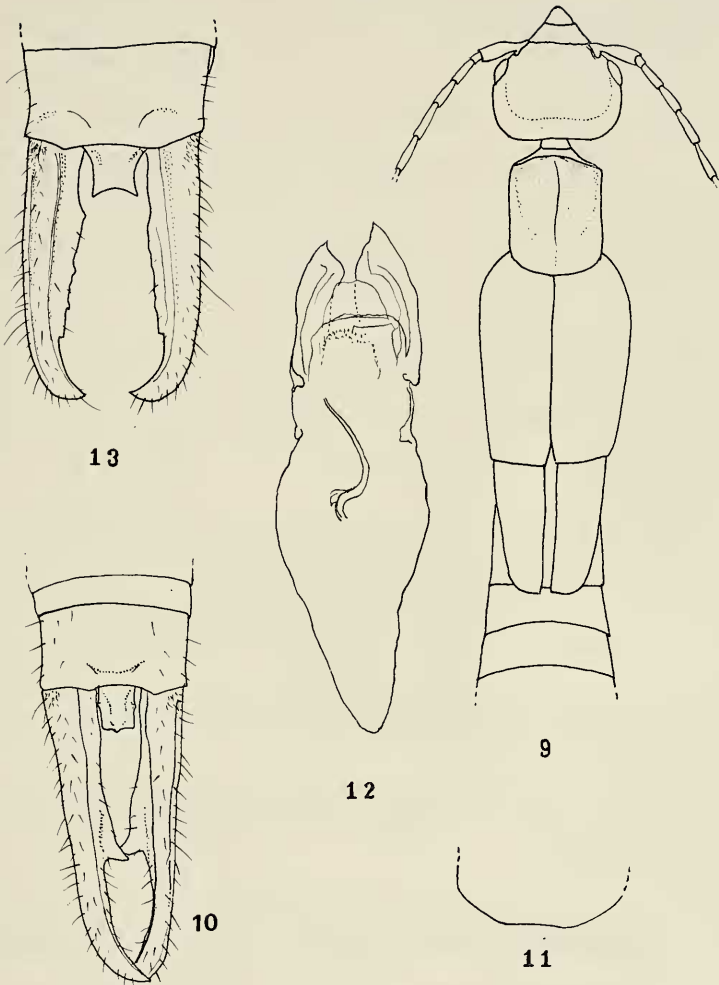
Psalidophora angusticollis Dubrony, 1879, *Annali Mus. civ. St. nat. Genova*, 14: 359 (♀ nec ♂; Sarawak Borneo).

Auchenomus angusticollis; Borelli, 1921, *Boll. Musei Zool. Anat. comp. R. Univ. Torino*, 35: 6 (♂, Sandakan, Borneo).

Material examined - 1 ♀, labelled as: i) Borneo Sarawak, 1865-66, coll. G. Doria - printed label; ii) *Psalidophora angusticollis* Dubrony - a handwritten label by Dubrony (= De Bormans); iii) ♀ - handwritten; iv) *angusticollis* Dubr. - handwritten by Gestro; v) Typus - a printed label with borders in red.



Figs. 6-8. *Nesogaster amoenus* (Stål), ♂. 6: ultimate tergite and forceps. *Auchenomus angusticollis* (Dubrony), Type ♀. 7: anterior portion of body; 8: ultimate tergite and forceps.



Figs. 9-13. *Chaetospania nigriceps* (Kirby), ♂. 9: anterior portion of body; 10: ultimate tergite and forceps; 11: posterior margin of penultimate sternite; 12: genitalia. ♀. 13: ultimate tergite and forceps. (All figs. are drawn from the Syntypes ♂, ♀ of *Platylabia fallax* Bormans).

R e m a r k s - The specimen is in good condition except that fore and hind legs of the right side and antennae except left basal segment are missing.

This species was originally described from Borneo is now known from Philippine Islands also.

Subfamily LABIINAE

Chaetospania nigriceps (Kirby) (Fig. 9-13)

Platylabia nigriceps Kirby, 1891, *J. Linn. Soc. (zool.)*, 23: 518 (♂, New Guinea).

Chaetospania nigriceps, Burr, 1911, *Genera Insect.*, 122: 54 (partim).

Platylabia fallax Bormans, 1894, *Annali Mus. civ. St. nat. Genova*, (2) 14: 394 (1 ♂, 2 ♀; Carin Chebà, 900-1100 m, Mai-Décembre).

M a t e r i a l e x a m i n e d - 1) 1 ♂ labelled as: i) Carin Chebà, 900-1100 m, L. Fea, V-XII.88 - printed label; ii) Typus - printed with borders in red; iii) *Platylabia fallax* ♂ sp. nova - handwritten by Bormans; iv) teste A. De Bormans - printed; v) *fallax* Borm. - handwritten by Gestro; genitalia mounted between two coverslips and pinned with the specimen.

2) 1 ♀ labelled as: i) Carin Chebà, 900-1100, L. Fea, V-XII.88 - printed label; ii) Typus - printed with borders in red; iii) *Platylabia fallax* ♀ sp. nova - handwritten by Bormans; iv) *Platylabia fallax* ♀ sp. nova, teste A. De Bormans - partly handwritten and partly printed.

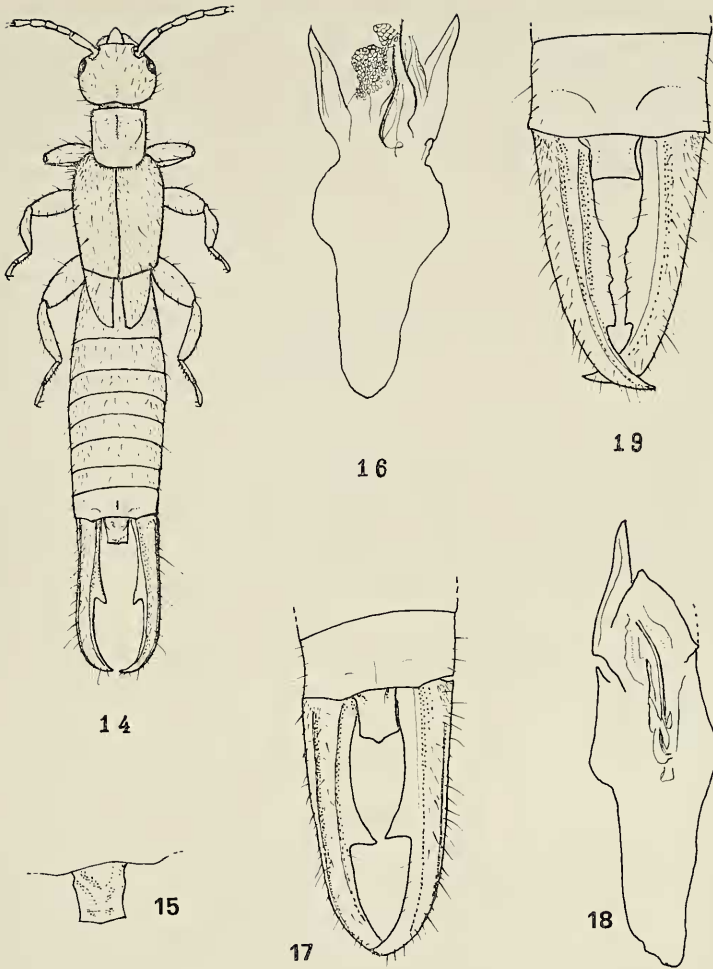
R e m a r k s - The material listed under 1) and 2) are 'Syntypes' of *Platylabia fallax* described by Bormans which is a synonym of *Chaetospania nigriceps* (Kirby).

Chaetospania nigriceps (Kirby) and *C. thoracica* (Dohrn) are very close but both differ by the shape of male pygidium, especially hind margin and genitalia.

Chaetospania modiglianii sp. n. (Figs. 14-16)

♂: General colour brownish black; antennae and mouth parts dark brown; legs yellowish, femora shaded with black but colour gradually lighter posteriorly. Build slender, depressed, clad with fine yellow pubescence, longer on forceps.

Head cordiform, about as long as broad, depressed, occiput comparatively raised, faint depression present in the centre, obscurely



Figs. 14-19. *Chaetospania modiglianii* sp. n., Holotype ♂. 14: dorsal view; 15: pygidium enlarged; 16: genitalia. *Chaetospania thoracica* (Dohrn), ♂. 17: ultimate tergite and forceps; 18: genitalia, right paramere missing, ♀. 19: ultimate tergite and forceps.

punctate, sutures obsolete, hind margin feebly sinuate in middle. Eyes small, about $1/2$ as long as the post-ocular length. Antennae partly broken (right side with 10 and on the left 6 segments remaining), 1st stout, narrowed apically, slightly shorter than the distance between

antennal bases; 2nd short, about as long as broad; 3rd long and slender; 4th about as long as the preceding segment but stouter; 5th onwards gradually increasing in length, each narrowed at base. Pronotum smooth, slightly longer than broad, sides deplanate, parallel, hind margin and angles rounded, median sulcus faintly marked in the anterior half only, prozona weakly raised, metazona depressed. Elytra and wings well developed, faintly punctate, clad with long and short pubescence. Legs typical for the genus. Abdomen almost smooth, moderately convex, spindle shaped, long pubescence sparse and fine one dense. Penultimate sternite with hind margin rounded, scarcely emarginate in middle. Ultimate tergite strongly transverse, gently narrowed posteriorly, hind margin trisinate, above the bases of forceps oblique, median suture faintly marked in middle, the area above the bases of forceps weakly raised. Pygidium slightly longer than broad, broader and convex at base, narrowed apically and deplanate, lateral margin feebly convex, hind margin wavy, in middle slightly turned upwards. Forceps depressed, remote at base, almost straight, incurved in apical 1/3 and tapering, internal margin with dorsal and ventral borders, latter forming a weak flange and terminating into a sharp, triangular and posteriorly directed tooth, apices hooked and pointed. Genitalia with parameres narrowed anteriorly, external margin wavy, virga short and stout.

♀: unknown.

M e a s u r e m e n t s (in mm) of Holotype ♂.

Length of body: 5.1; length of forceps: 1.6.

M a t e r i a l e x a m i n e d. - Holotype ♂ labelled as: i) Sumatra Si-Rambé, XII.90-III.91, E. Modigliani - a printed label; ii) ♂ 127 = 96 - handwritten; iii) *Platylabia fallax* de Bormans teste A. De Bormans - partly printed and partly handwritten; genitalia mounted between two coverslips and pinned with the specimen.

R e m a r k s - This species comes very close to *Chaetospania nigriceps* (Kirby) but differs by the shape of pygidium being narrower apically and lateral margin convex (*vs* almost of uniform width and lateral margin with a faint tubercle at basal 1/3 in *C. nigriceps*); forceps with branches slender and inner flanger weaker (*vs* stouter and inner flange more pronounced) and genitalia with parameres narrower, gradually narrowing from base to apex (*vs* strongly deplanate with tip pointed).

Chaetospania thoracica (Dohrn) (Figs. 17-19)

Platylabia thoracica Dohrn, 1867, *Stettin. ent. Ztg.*, 28: 348 (♂, ♀, Penang [Island, Strait settlements]; Ceylon).

Chaetospania thoracica; Burr, 1911, *Genera Insect.*, 122: 54.

Material examined - 1) 1 ♂ labelled as: i) Sumatra, Padang, 1890, E. Modigliani - a printed label; ii) 101-96 - handwritten; iii) *Platylabia fallax* De Borm. teste A. De Bormans - partly handwritten and partly printed; genitalia mounted between two coverslips and pinned with the specimen.

2) 1 ♀ labelled as: i) Sumatra, Balighe, X.90-III.91, E. Modigliani - a printed label; ii) *Platylabia dimitata* Dohrn, teste A. De Bormans - partly handwritten and partly printed.

Remarks - This specimen is referred here on account of its male pygidium produced triangularly posteriorly and genitalia with comparatively narrower parameres than that of *C. nigriceps* (Kirby).

The ♀ referred here should be treated with reserve since it is generally difficult to place accurately isolated females in Dermaptera.

Chaetospania beccarii sp. n. (Figs. 20-23)

♂. General colour yellowish brown, head and antennae somewhat darker and legs lighter; elytra and wings black. Body covered with long and short pubescence.

Head about as long as broad, depressed, occiput weakly raised, smooth, sutures obsolete, hind margin sinuate in middle. Eyes not prominent, about 1/2 as long as the post-ocular length. Antennae 12-segmented (right antennae with 11 segments only), 1st stout, strongly narrowed posteriorly, slightly shorter than the distance between antennal bases; 2nd short, about as long as broad; 3rd cylindrical; 4th about as long as the preceding, slightly stouter, narrowed basally; 5th onwards gradually increasing in length and stouter, excepting a few apical ones thin and shorter. Pronotum about as broad as long, smooth, anterior margin convex, sides parallel and deplanate, hind margin and angles rounded, prozona weakly raised, median sulcus faintly marked in anterior half. Legs typical for the genus, claw without arolium. Elytra and wings well developed, smooth. Abdomen depressed, smooth, narrowed at base, gradually enlarging posteriorly, lateral tubercles poorly marked, sides of segments broadly convex. Penultimate sternite broadly

rounded posteriorly with slight emargination in middle. Ultimate tergite quadrate, smooth, depressed, along the hind margin in middle with a series of compressed folds, hind margin trisinate. Pygidium longer than broad, broader and convex at base, slightly narrowed apically with three teeth, of which middle one larger and feebly turned upwards and lateral one directed ventrally, a little before posterolateral tooth, a small tubercle present on either side. Forceps with branches almost straight, tapering apically with tip gently hooked and pointed, internally trigonal in basal half, ventral border sharp and wavy. Genitalia with parameres a little over seven times longer than broad, almost of uniform width, except near apices narrowed with tip pointed and incurved; virga short, broadly curved.

♀: unknown.

M e a s u r e m e n t s (in mm) of Holotype ♂.

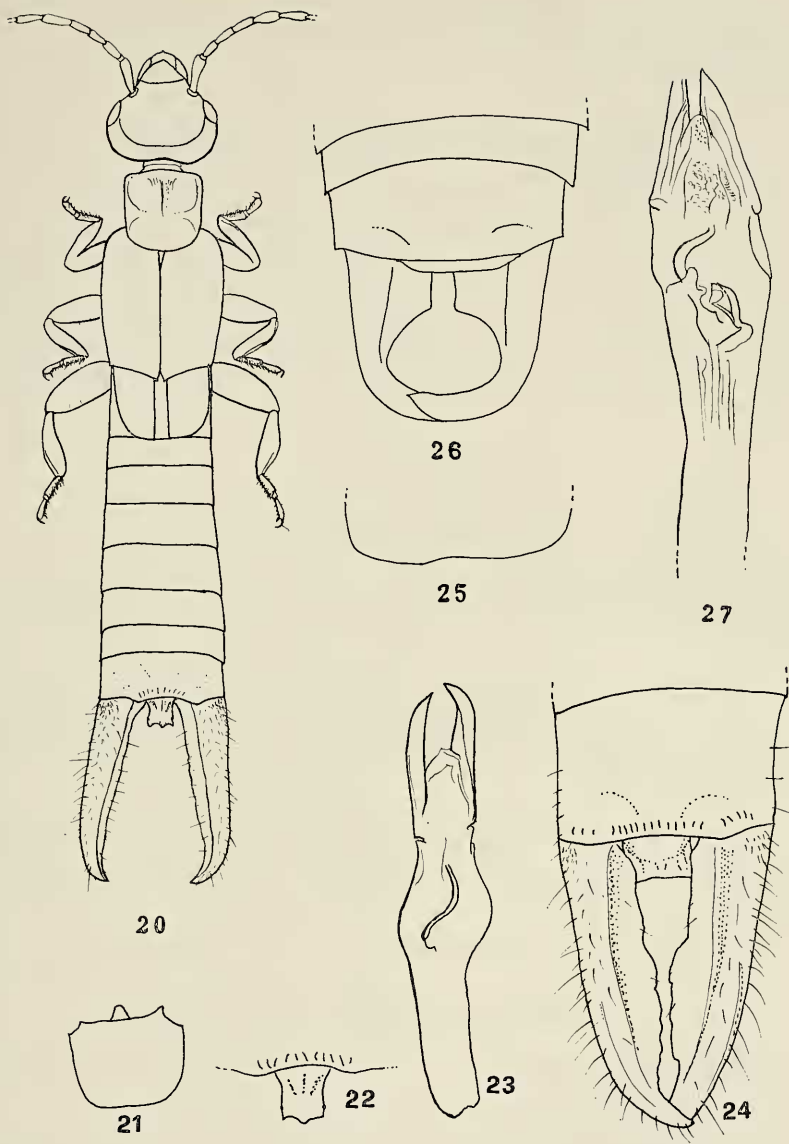
Length of body: 4.7; length of forceps: 1.5.

M a t e r i a l e x a m i n e d - Holotype ♂ labelled as: i) Ternate, Beccari, X.1875; ii) ♀ - a handwritten label; iii) *Platylabia thoracica* Dohrn teste A. Dubrony (= De Bormans) - a partly handwritten and partly printed; genitalia mounted between two coverslips and pinned with the specimen.

R e m a r k s - This species (males) comes very close to *C. fulvochracea* Borelli from Philippine Islands in having almost similar pygidium but differs in being smaller in size i.e. 6.2 mm (*vs* slightly larger in size i.e. 9.3 mm in *C. fulvochracea*); pygidium having a small tubercle laterally close to posterolateral tooth (*vs* lacking such tubercle); forceps with inner flange narrow, extending through the entire length and broadly wavy (*vs* internal margin with broader flange extending up to a little beyond middle and terminated by a sharp, triangular and posteriorly directed tooth) and genitalia with parameres a little over seven times longer than its width, almost of uniform width throughout except at apices narrowed and incurved (*vs* parameres three times longer than broad, tapering apically and undulate).

Chaetospasia sp. (Fig. 24)

M a t e r i a l e x a m i n e d - 1 ♀ labelled as: i) Isole Aru, Wokan, O. Beccari, 1873 - a printed label; ii) ♂ - a handwritten label; iii) *Platylabia thoracica* Dohrn teste A. Dubrony (= De Bormans).



Figs. 20-27. *Chaetospania beccarii* sp. n., Holotype ♂. 20: dorsal view; 21: penultimate sternite; 22: pygidium enlarged; 23: genitalia. *Chaetospania* sp., ♀. 24: ultimate tergite and forceps. *Labia curvicauda* (Motschulsky), ♂. 25: posterior margin of penultimate sternite; 26: 9th, ultimate tergite and forceps; 27: genitalia.

Remarks - Although it comes close to *C. thoracica* (Dohrn), it is slightly larger in size (length of body 9.6 mm and forceps - 2.0 mm) and stouter in build.

Labia curvicauda (Motschulsky) (Figs. 25-27)

Forficesila curvicauda Motschulsky, 1863, *Bull. Soc. nat. Moscou*, 36: 2 (♂, ♀; Nura Ellia Mountains, Ceylon).

Labia curvicauda; Burr, 1911, *Genera Insect.*, 122: 56.

Material examined - 1 ♂ labelled as: i) N. Guinea Salvatti, XI.1875, Beccari; ii) *Platylabia dimidiata* Dohrn, teste A. Dubrony (= De Bormans) - a partly handwritten and partly printed label; genitalia mounted between two coverslips and pinned with the specimen.

Subfamily IRDEXINAE

Irdex nitidipennis (Bormans)

Spongiphora nitidipennis Bormans, 1894, *Annali Mus. civ. St. nat. Genova*, (2) 14: 382 (♂; Burma).

Irdex nitidipennis; Srivastava, 1985, *Annali Mus. civ. St. nat. G. Doria, Genova*, 85: 209.

Material examined - 1 ♀ labelled as: i) Sumatra, Si-Rambé, XII.90-III.91, E. Modigliani; ii) *Sphingolabis arachidis* Yersin (= *wallacei* Dohrn), teste A. De Bormans - partly handwritten and partly printed.

Remarks - Although it is generally difficult to identify isolated females in Dermaptera, the above specimen undoubtedly belongs to this species.

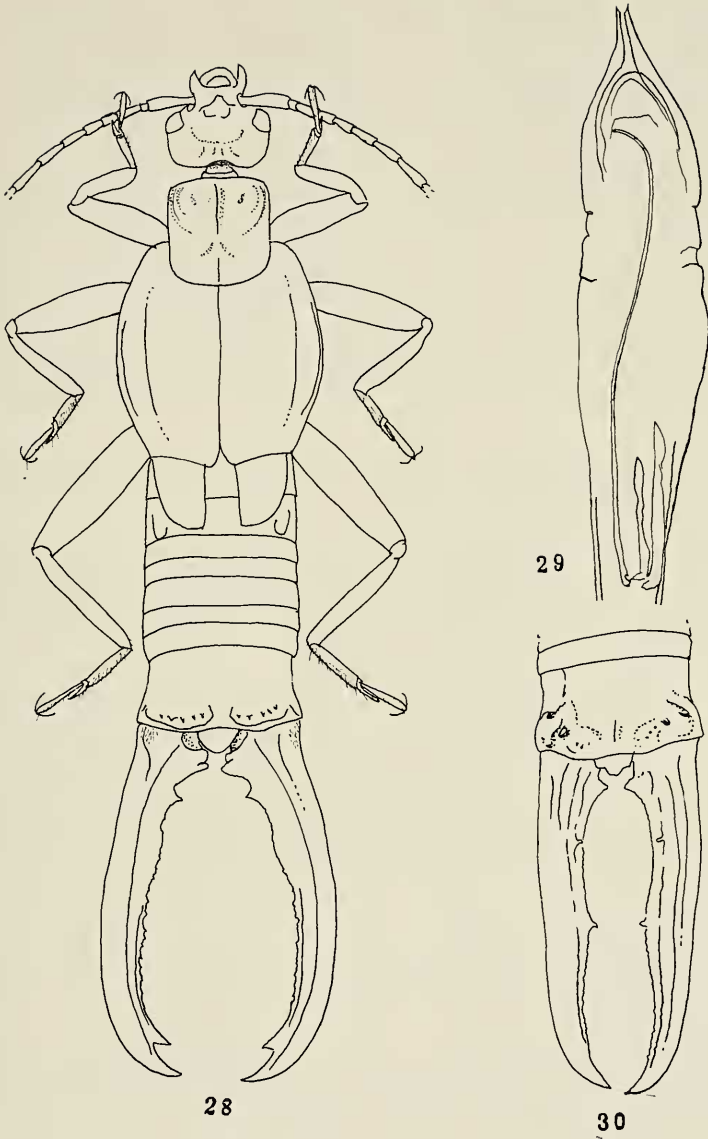
SRIVASTAVA (1985) has discussed in detail the identity of this species.

Marava arachidis (Yersin)

Forficula arachidis Yersin, 1860, *Annl. Soc. ent. Fr.*, (3) 8: 509 (Adventive et Marseilles, France).

Marava arachidis; Hincks, 1954, *Proc. R. ent. Soc. Lond.*, (8) 23: 162.

Material examined - 1 ♂ labelled as: i) Birmania, Rangoon, VI.1887, Fea; ii) *Sphingolabis arachidis* Yersin ♂ = *Wallacei* Dohrn - a handwritten label by Bormans; iii) *Sphingolabis arachidis* Yersin (= *wallacei* Dohrn), teste A. De Bormans - partly handwritten and partly printed.



Figs. 28-30. *Chelisocheilla superba* (Dohrn), ♂. 28: dorsal view; 29: genitalia, ♀. 30: ultimate tergite and forceps. (All figs. drawn from the syntypes ♂, ♀ of *Chelisocheilla doriae* Bormans).

Chelisochella superba (Dohrn) (Figs. 28-30)

Lobophora superba Dohrn, 1865, *Stettin. ent. Ztg.*, 26: 71 (♂, ♀; in Peninsula Malaccana).

Chelisochella superba; Verhoeff, 1902, *Zool. Anz.*, 25 (665): 196; Steinmann, 1979, *Folia Ent. Hung.*, 32 (1): 163.

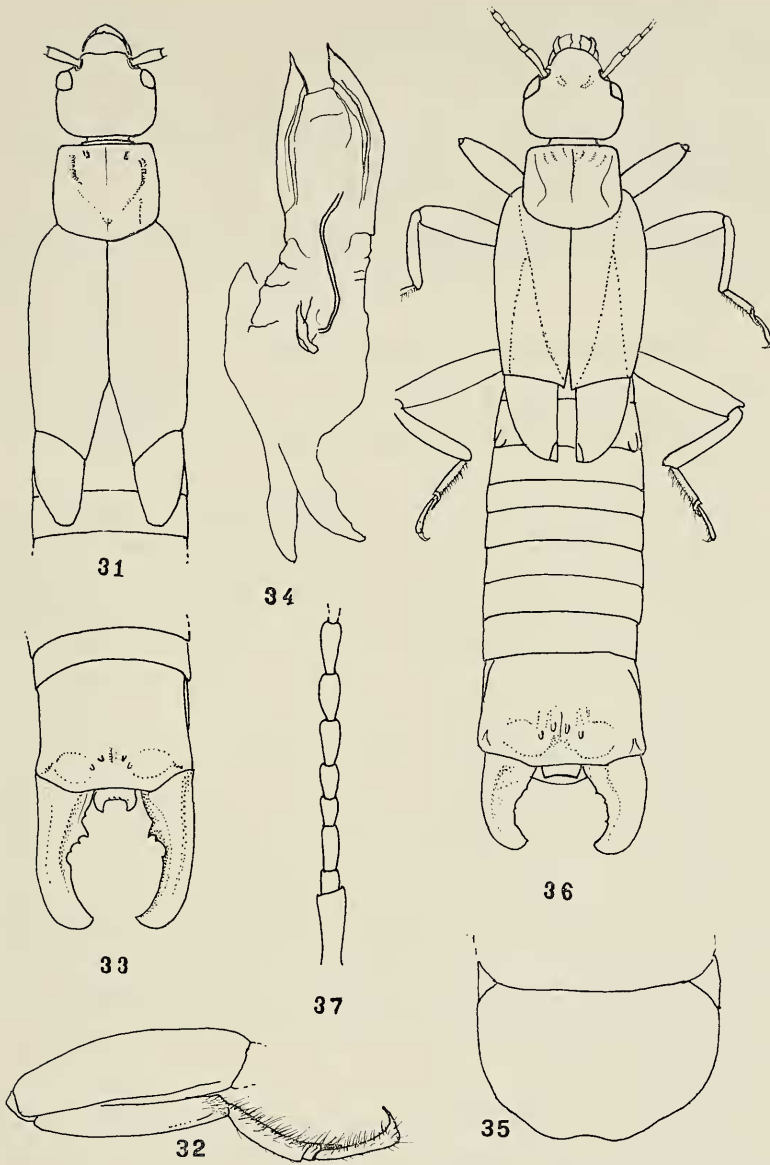
Chelisoches doriae Bormans, 1900, *Annali Mus. civ. St. nat. Genova*, (2) 20: 463 (♂, ♀; Borneo, Sarawak).

Material examined - 1 ♂ labelled as: i) Borneo, Sarawak, 1865-66, Coll. G. Doria; ii) *Lobophora superba* ♂ - handwritten, not by Bormans; iii) *Lobophora superba* Dohrn ♂, teste A. Dubrony (= De Bormans) 1879 - partly handwritten and partly printed; iv) Museo Civico di Genova - printed and v) Syntypus, *Chelisoches doriae* n. sp. 1900, teste A. De Bormans - partly handwritten and partly printed; ♂ genitalia mounted between two coverslips and pinned with the specimen.

1 ♀ with equal number of labels as male above except one additional label which reads as « 269, Dohrn ».

The original description of the species (DOHRN, 1865) together with that of BURR (1910) and the description of *Chelisoches doriae* Bormans, a synonym of this species, appear to be adequate. However, following information will be of much use.

♂. Build stout, size large (♂: length - 21 mm, forceps - 12 mm; ♀: length - 22 mm, forceps - 13 mm). Head longer than broad, frons smooth, occiput raised, latter depressed in middle, sutures fine and hind margin strongly sinuate posteriorly. Antennae with 1st segment, constricted basally, slightly longer than the distance between antennal bases; 2nd short, about as long and broad; 3rd long and slender; 4th and 5th subequal, both shorter than 3rd; 5th onwards gradually increasing in length, apical ones thin and rod shaped. Elytra with a purple metallic sheen, shoulders prominent, costal fold very prominent giving false impression of a carina. Legs long and slender, tibiae hardly sulcate above at extreme apex, hind tarsi with 1st segment slightly longer than the 3rd; 2nd extending below the 3rd in a little less than half the length, clad with golden yellow hairs. Abdomen convex, obscurely punctulate, lateral fold on 4th strongly and on 3rd comparatively less marked. Ultimate tergite smooth, with black and brownish vertical stripes alternating. Pygidium subvertical, convex above, posteriorly obtuse.



Figs. 31-37. *Adiathetus elegans* (Bormans), Type ♂. 31: anterior portion of body; 32: hind leg, enlarged; 33: ultimate tergite and forceps; 34: genitalia; 35: penultimate sternite, enlarged. ♂ from Java. 36: dorsal view; 37: a few basal antennal segments.

♀. Pygidium broader at base, narrowed posteriorly into a broad tubercle and postero-laterally with a minute point; posterior tumid elevations of ultimate tergite with a pair of tubercles laterally.

Remarks - In the present materials before me the elytra are ecarinate. The costal fold is prominent which perhaps might have lead earlier authors to consider it as a carina.

In the light of above this species comes close to members of genus *Adiathetus* Burr, in having the tibiae sulcate above at extreme apex.

***Adiathetus elegans* (Bormans) comb. n. (Figs. 31-40)**

Chelisothes elegans Bormans, 1900, *Ann. Mus. civ. St. nat. Genova*, (2) 20: 464 (1 ♂; Mt. Singalang, Sumatra).

Euenkrates elegans var. *burri* and *inermis*, Boeseman 1954, *Zool. Verh.*, Leiden, 21: 97.

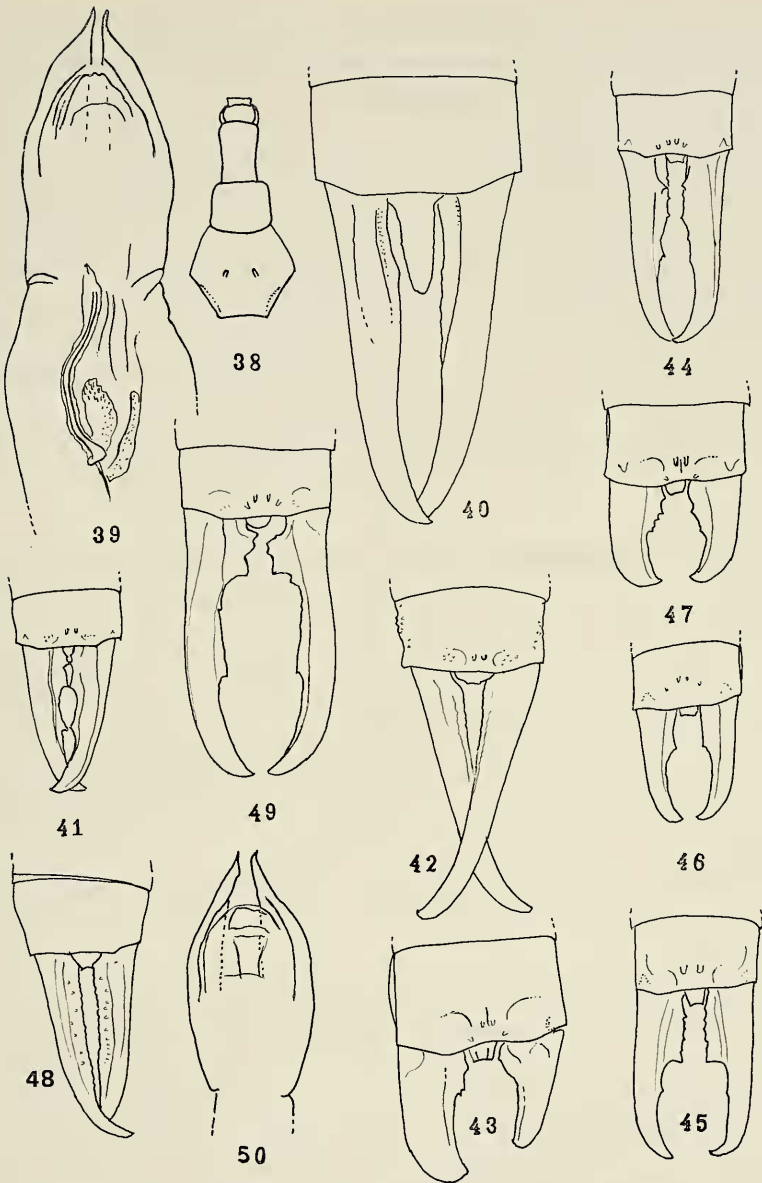
Material examined - 1 ♂ labelled as: i) Sumatra, Mte. Singalang, Luglio 1878, O. Beccari; ii) *Chelisothes elegans* ♂ spec. nova - handwritten by Bormans; iii) teste A. De Bormans - printed; iv) Typus - printed in red with a red border; v) *elegans* Borm. - handwritten by Gestro; genitalia mounted between two coverslips and pinned with the specimen.

Although BORMANS (1900) description of the species is adequate following additional information will be useful.

Eyes about half as long as the post-ocular length. Basal antennal segment slightly shorter than the distance between antennal bases. Legs long and slender; femora compressed; tibiae scarcely sulcate above at extreme apex; hind tarsi with 1st segment about as long as the 3rd; 2nd narrowed apically and extending below the 3rd, clad with golden yellow hairs. Pygidium broadly emarginate posteriorly, postero-lateral angles produced into somewhat incurved points. Genitalia with parameres narrowed apically, tip pointed; virga thin, tubular and near base with chitinous plates.

Remarks - The condition of the 'Type ♂' is not very good. The antennae of both sides excepting right basal two segments and left basal one and left hind leg, are missing.

The exact taxonomic position of the species was hitherto doubtful since it has been referred by various authors either in *Chelisothes* Scudder or *Euenkrates* Rehn.



Figs. 38-50. *Adiathetus elegans* (Bormans), ♂ from Java. 38: thoracic sternal plates; 39: genitalia. ♀ from Java. 40: ultimate tergite and forceps. *Chelisochea morio* (F), ♂. 41: ultimate tergite and forceps. ♀. 42: ultimate tergite and forceps. ♂. 43-47: ultimate tergite and forceps. ♀. 48: ultimate tergite and forceps. ♂. 49: ultimate tergite and forceps; 50: parameres, enlarged.

The inclusion of the species under *Adiathetus* seems to be justified on account of its stout build, long and slender legs with tibiae hardly sulcate above at extreme apex. Moreover, it shows strong resemblance with other members of the genus.

SRIVASTAVA (1984) referred 1 ♂, 1 ♀ to this species from Java. The male shows some variations in the shape of pygidium in being feebly emarginate posteriorly and the forceps are weakly armed internally. Antennal segments are slender, 1st gently expanded apically and shorter than the distance between antennal bases; 2nd short, about as long as broad; 3rd long and slender; 4th and 5th subequal, stouter and both shorter than the preceding; 6th onwards segments gradually increasing in length and thinner, but each one narrowed basally.

The female possesses elongated pygidium, about four times longer than broad, very similar to the other members of the genus.

Chelisoches morio (F.) (Figs. 41-50)

Forficula morio Fabricius, 1775, *Syst. Ent.*: 270 (Insula) Otaheita maris - Pacifici (Tahiti).

Material examined - 1) 1 ♂ labelled as: i) Buitenzorg, G.B. Ferrari, 1875; ii) ♂, iii) *Lobophora morio* (F.), teste A. Dubrony (= De Bormans).

2) 1 ♂ labelled as: i) Borneo, Sarawak, 1865-66, coll. G. Doria; ii) ♂; iii) *Lobophora morio* (F.), teste A. Dubrony (= De Bormans) (Fig. 41).

3) 1 ♀ labelled as: i) Australia, Somerset, L.M. D'Albertis, I.'76, ii) ♂; iii) *Lobophora morio* (F.), teste A. Dubrony (= De Bormans) (Fig. 42).

4) 1 ♂ labelled as: i) Isole Aru, Wokan, O. Beccari, 1873; ii) ♀; iii) *Lobophora morio* (F.), teste A. Dubrony (= De Bormans); genitalia mounted between two coverslips and pinned with the specimen (Fig. 50).

5) 1 ♂ labelled same as No. 4 above except label 'No. ii' (Fig. 43).

6) 1 ♂ labelled as: i) N. Guinea, Hatam, VI.1875, Beccari; ii) *Lobophora morio* var. ♂ brachylabis - handwritten by Bormans; iii) *Lobophora morio* (F.) var. brachylabis teste A. Dubrony (= De Bormans) - partly handwritten and partly printed (Fig. 44).

7) 1 ♂ labelled as: i) N. Guinea, Ramoi, Beccari, II.1875; ii) *Lobophora morio* (Fab.) ♂ var. elytris metallicis - handwritten, by Bor-

mans; iii) *Lobophora morio* (F.) ♂ var. *elytris metallicis* teste A. Dubrony (= De Bormans) - partly handwritten and partly printed; genitalia not found in the specimen, perhaps taken out earlier (Fig. 45).

8) 1 ♂ labelled as: i) Nuova Guinea, Fly River, L.M. D'Albertis 1876-77; ii) *Lobophora morio* (F.) ♂ - handwritten by Bormans; iii) *Lobophora morio* (F.) var. *elytris metallicis* teste A. Dubrony (= De Bormans) - partly handwritten and partly printed; genitalia mounted between two coverslips and pinned with the specimen (Fig. 46).

9) 1 ♂ labelled as: i) Sumatra, Siboga, X.90-III.91, E. Modigliani; ii) 117; iii) ♀; iv) *Chelisoches morio* (F.) teste A. De Bormans - partly handwritten and partly printed (Fig. 47).

10) 1 ♀ labelled as: i) Sumatra, Siboga, X.90-III.91, E. Modigliani; ii) *Chelisoches morio* (F.) teste A. De Bormans - partly handwritten, and partly printed (Fig. 48).

11) 1 ♂ labelled as: i) N. Guinea SE, Haveri, Loria, VII-XI.'93; ii) *Chelisoches morio* (F.), teste A. De Bormans - partly handwritten and partly printed (Fig. 49).

12) 1 ♂ labelled as: i) Is. Trobriand, Febbraio 1890, L. Loria; ii) *Chelisoches morio* (F.), teste A. De Bormans - partly handwritten and partly printed.

13) 1 ♂ labelled as: i) N. Guinea, Ighibirei, Loria, VII-VIII.'90; ii) *Chelisoches morio* (F.), teste A. De Bormans - partly handwritten and partly printed.

Remarks - The present material shows usual variations in male forceps (Figs. 41,43-47 & 49), besides other morphological characters.

***Chelisoches brevipennis* (Borelli) (Figs. 51-52)**

Chelisoches brevipennis Borelli, 1923, *Boll. Musei Zool. Anat. comp. R. Univ. Torino*, 38 (NS): 12 (♂, ♀; N. Palawan, Binaluan).

Material examined - 1 ♂ labelled as: i) Carin Chebà, 900-1100 m, L. Fea, V-XII.'88; ii) ♂; iii) *Chelisoches morio* (F.), teste A. De Bormans - partly handwritten and partly printed.

Remarks - This species resembles closely *C. morio* (F.) but differs in males by the shape of pygidium in being notched in middle posteriorly and genitalia with parameres gently expanded externally in middle and with a slight emargination.

Proreus variopictus (Bormans) (Figs. 53-55)

Chelisothes variopictus Bormans, 1900, *Annali Mus. civ. St. nat. Genova*, (2) 20: 462 (♂; Mentawai, Sipora).

Proreus variopictus; Burr, 1912, *Sber. Ges. naturf. Freunde Berl.*, 5: 325 (♀; Java); Borelli, 1926, *Res. biol.*, 1 (5): 268 (♂ genitalia from the type).

M a t e r i a l e x a m i n e d - Type ♂ labelled as: i) Mentawai, Sipora, Sereinu, V-VI, 94, Modigliani; ii) Typus - printed in red with red border; iii) *Variopictus* Borm. - handwritten by Gestro; iv) *Chelisothes variopictus* sp. nov., teste A. De Bormans - partly handwritten and partly printed; v) specie ben distinta, non è sinonimo di *Ch. fuscipennis* Haan né *Ch. ruficeps* Burr - a handwritten label by Borelli; genitalia not with the specimen; it has been figured by Borelli (1926).

R e m a r k s - The type was examined by BORELLI (1926) who provided some additional information about the species alongwith the figure of male genitalia and ultimate tergite and forceps.

The condition of type is fair, only right antennae, middle and hind legs of right side and 3rd tarsal segment of foreleg and tarsi of left hind leg are missing.

Subfamily OPISTHOSMIINAE

Narberia beccarii (Bormans) (Figs. 56-57)

Opisthoscemia beccarii Bormans, 1900, *Annali Mus. civ. St. nat. Genova*, (2) 20: 465 (♂; Singalang, Sumatra); Burr, 1904, *Trans. R. ent. Soc. Lond.*: 304.

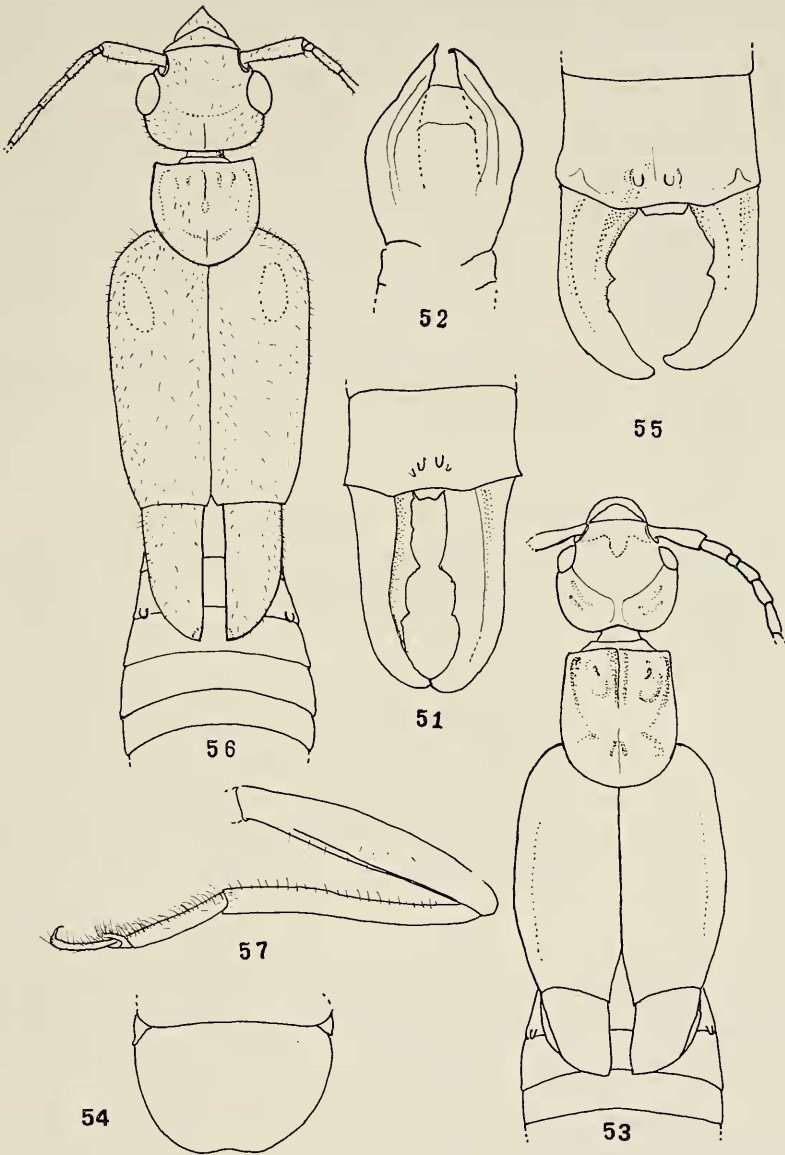
Narberia beccarii; Burr, 1911, *Genera Insect.*, 122: 95.

M a t e r i a l e x a m i n e d - 1 ♂ labelled as: i) Sumatra, Mte. Singalang, Luglio, 1878, O. Beccari; ii) Typus - printed in red with red border; iii) *Opisthoscemia beccarii* ♂ spec. nova - handwritten by Bormans; iv) teste A. De Bormans - printed; v) *Beccarii* Borm. - handwritten by Gestro.

R e m a r k s - The 'type' is in poor condition. A few apical antennal segments, legs of right side and hind portion of body beyond 7th tergite are missing.

Following additional information will be useful in recognising the species:

Body finely pubescent; head with frons raised, occiput depressed; antennal segments long and slender, 1st narrowed at base, gradually expanding apically, longer than the distance between antennal bases,



Figs. 51-57. *Chelisoches brevipennis* (Borelli), ♂. 51: ultimate tergite and forceps; 52: parameres, enlarged. *Proreus variopictus* (Bormans), Type ♂. 53: anterior portion of body; 54: penultimate sternite; 55: ultimate tergite and forceps. *Narberia beccarii* (Bormans), Type ♂. 56: anterior portion of body; 57: hind leg, enlarged.

2nd short, about as long as broad; 3rd long and slender, 4th onwards segments increasing in length and thinner; eyes prominent, slightly longer than the post-ocular length; pronotum anteriorly truncate with angles slightly projecting, semicircular, lateral and hind margins forming a continuous curve, median sulcus faintly marked, prozona feebly raised and metazona depressed; elytra and wings well developed; legs long and slender, hind tarsi with 1st segment slightly longer than the 3rd, clad with long, fine hairs on the underside; abdomen convex, smooth, lateral tubercles on 3rd tergite poorly and on 4th distinctly marked, sides of segments 5th to 7th broadly rounded.

This species is known by its 'Type' only. Since the hind portion of the body is missing, it is not possible to comment further on the taxonomic position of the species.

Timomenus lugens (Bormans) (Figs. 58-73)

Opisthocosmia lugens Bormans, 1894, *Annali Mus. civ. St. nat. Genova*, (2) 14: 398 (2 ♂♂, 1 ♀, Carin Chebà; Carin Asciiiii, Burma).

Timomenus lugens; Burr, 1910, *Fauna Brit. India*: 198.

Opisthocosmia aesculapius Burr, 1905, *Bol. R. Soc. Espan. Nat.*: 230 (♂, Bhutan - Madrid Museum) - Syn. n.

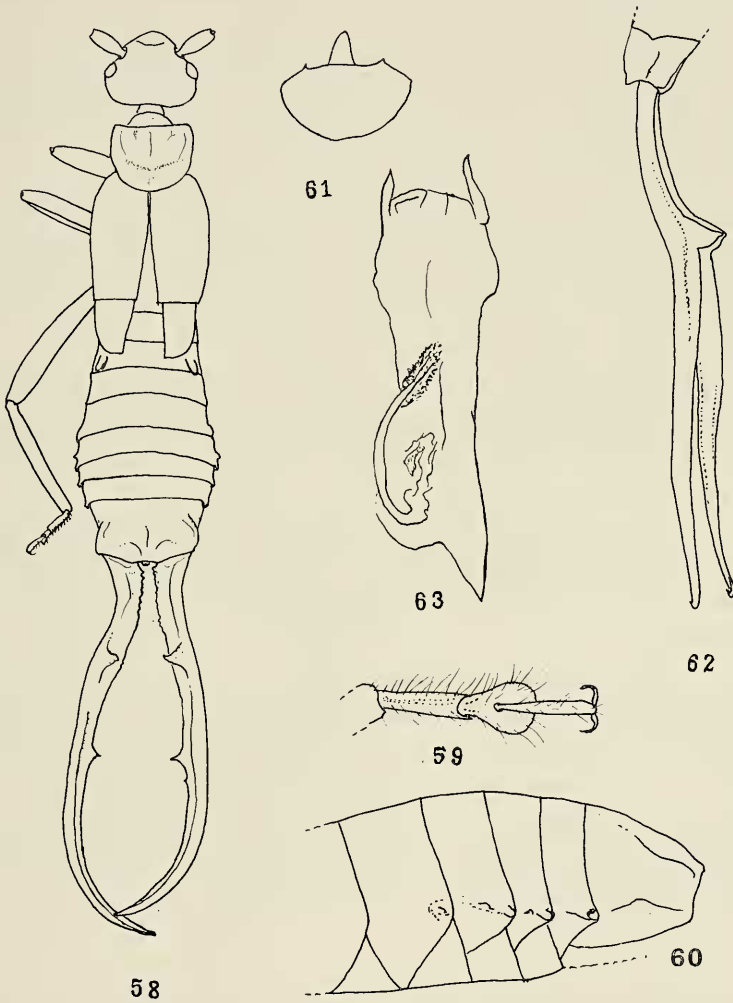
M a t e r i a l e x a m i n e d - 1) Lectotype ♂ labelled as: i) Carin Chebà, 900-1100 m, L. Fea, V-XII.'88; ii) *Opisthocosmia lugens* ♂ sp. nova - handwritten by Bormans; iii) *Opisthocosmia lugens* sp. nov., teste A. De Bormans, partly handwritten and partly printed; iv) Typus - printed in red with red border; v) *lugens* Borm. - handwritten by Gestro; genitalia mounted between two coverslips and pinned with the specimen.

2) Paralectotype 1 ♂, labelled as: i) Carin Chebà, 900-1100 m, L. Fea, V-XII.'88; ii) Syntypus - red label handwritten, not by Bormans; iii) *Opisthocosmia lugens* sp. nov., teste A. De Bormans - partly handwritten and partly printed; genitalia mounted between two coverslips and pinned with the specimen.

3) 1 ♂ labelled as: i) Carin Chebà, 400-600 m, L. Fea, XI.88; ii) *Opisthocosmia lugens* Bormans, teste A. De Bormans - partly handwritten and partly printed.

4) Paralectotype 1 ♀ labelled as: i) Carin Asciiiii Chebà, 1200-1300 m, L. Fea, I-88; ii) Typus - printed in red with red border; iii) *Opisthocosmia lugens* ♀ sp. nova - handwritten, by Bormans; iv) *Opi-*

sthocosmia lugens sp. nov. - teste A. De Bormans - partly handwritten and partly printed.



Figs. 58-63. *Timomenus lugens* (Bormans), Lectotype ♂. 58: dorsal view; 59: hind tarsi, enlarged; 60: sides of abdominal segments; 61: penultimate sternite; 62: forceps, in profile; 63: genitalia.

Measurements (in mm).

| | Lectotype | Paralectotypes | | 1 ♂ |
|-------------------|-----------|----------------|------|------|
| | ♂ | 1 ♂ | 1 ♀ | |
| Length of body | 11.8 | 8.7 | 10.5 | 11.3 |
| Length of forceps | 10.1 | 4.5 | 5.4 | 5.8 |

Remarks - This species is adequately described and could be easily recognised. However, some additional notes on the Lectotype ♂, Paralectotypes 1 ♂, 1 ♀ and another ♂; will be useful in understanding intraspecific variations, so far not recorded, in the species.

The Lectotype ♂ is smooth, shining black with elytra somewhat dull and tarsi brownish black; covered with short whitish hairs; sides of abdominal segments 6th to 9th obtuse angled posteriorly with a faint oblique ridge, represented by a blunt tubercle on 6th, two tubercles on 7th and one each on 8th and 9th posteriorly.

The Paralectotype ♂ is coloured same as the lectotype ♂ but former is shorter in length and stouter in build; sides of abdominal segments are lacking tubercular ridge and forceps less elongated although general shape is identical.

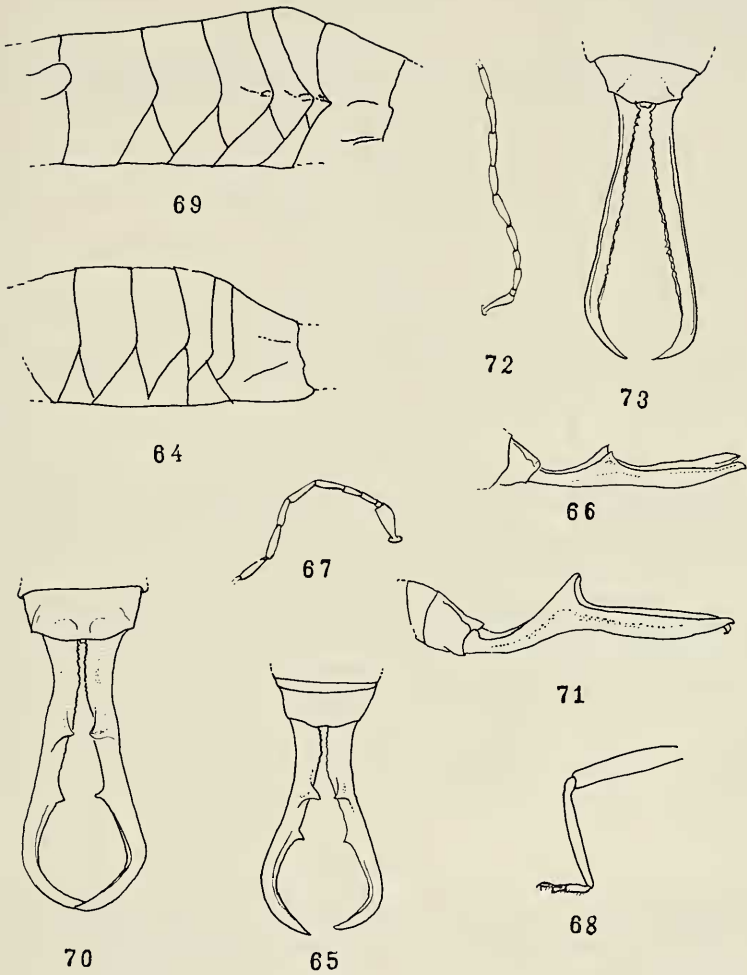
The third ♂ is shining blackish brown and is intermediate in body length and build between above two specimens. Sides of abdominal segments 7th to 9th are obtuse angled and provided with a weaker tubercular ridge.

The Paralectotype ♀ is shining brownish black, antennae with 1st segment less stout than in ♂; punctation on body slightly more prominent.

From the above it is evident that variations do exist in general body colour, build and length; and the sides of abdominal segments.

In the light of above remarks *Opisthocosmia aesculapius* Burr, is treated here as a synonym, which is identical in most characters and falls within the variational limits of other characters.

ACKNOWLEDGEMENTS. I am thankful to the Director, Zoological Survey of India, Calcutta for providing necessary facilities during the course of present study and to Dr. Roberto Poggi, Museo Civico di Storia Naturale «Giacomo Doria», Genova, Italy for sending the material on loan and arranging for editing and publication of this paper.



Figs. 64-73. *Timomenus lugens* (Bormans), Paralectotype ♂. 64: sides of abdominal segments; 65: ultimate tergite and forceps; 66: ultimate tergite and forceps, in profile. ♂. 67: a few basal antennal segments; 68: hind leg; 69: sides of abdominal segments; 70: ultimate tergite and forceps; 71: ultimate tergite and forceps, in profile. Paralectotype ♀. 72: a few basal antennal segments; 73: ultimate tergite and forceps.

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SUMMARY

The present paper deals with some material of Dermaptera determined by Bormans which comprises 'Types' of seven species described by him viz., *Psalidophora angusticollis*; *Platylabia fallax* (synonym of *Chaetospania nigriceps* (Kirby)); *Lobophora doriae* (syn. *Chelisochea superba* (Dohrn)); *Chelisochea elegans*; *Chelisochea variopictus*; *Opisthocosmia beccarii* and *Opisthocosmia lugens*.

As a result of present investigations a total of 18 species, excluding one identified up to generic level, since represented by a ♀ only, are recognised. Of these two species viz., *Chaetospania modiglianii* and *Chaetospania beccarii* are described as new. It is proposed to synonymise *Psalis lefroyi* Burr 1910 under *Nannopygia dohrni* Kirby 1891 and *Opisthocosmia aesculapius* Burr 1905 under *Opisthocosmia lugens* Bormans 1894 and transfer *Chelisochea elegans* Borm. under the genus *Adiathetus* Burr.

Lectotype and paralectotypes are designated for *Opisthocosmia lugens* Bormans, providing information on intraspecific variations.

Notes and illustrations for most of the species are provided.

RIASSUNTO

È riveduto un lotto di Dermatteri determinati da Bormans comprendenti i tipi di sette specie da lui stesso descritte: *Psalidophora angusticollis*, *Platylabia fallax*, (sinonimo di *Chaetospania nigriceps* (Kirby)), *Lobophora doriae* (sin. di *Chelisochea superba* (Dohrn)), *Chelisochea elegans*, *Chelisochea variopictus*, *Opisthocosmia beccarii* e *Opisthocosmia lugens*.

Nel materiale esaminato sono riconosciute 18 specie, due delle quali (*Chaetospania modiglianii* e *Chaetospania beccarii*) sono descritte come nuove.

Psalis lefroyi Burr 1910 è ritenuto sinonimo di *Nannopygia dohrni* Kirby 1891 (nunc *Paralabis*) e *Opisthocosmia aesculapius* Burr 1905 è posto in sinonimia di *Opisthocosmia lugens* Bormans 1894 (nunc *Timomenus*). *Chelisochea elegans* Borm. è trasferito nel genere *Adiathetus* Burr. Vengono infine designati lectotipo e paralectotipi per *Opisthocosmia lugens* Borm.

Per la maggior parte delle specie trattate sono fornite note e figure.